SUBJECT INDEX

Acetylcholine release
    effect of 5-HT 147, 150
    effect of 5-HT agonists and antagonists 152
Adenosine-3', 5'-monophosphate, ion conductances and 5-HT receptors 76
Age, 5-HT and cognitive performance 147,153
Age-Associated Memory Impairment, effect of 5-HT_3 receptor antagonists 160
Agoraphobia 230
Alcoholism, effect of 5-HT uptake inhibitors 261
ALK-3 301
Alzheimer's disease
    cholinergic function in brain 149
    5-HT in brain and CSF 148
    5-HT uptake inhibitors in treatment 263
Amitriptyline, effect on 5-HT_{1A} and 5-HT_3 receptors in brain 13, 17, 23
Amphetamines
    differential vulnerability of 5-HT axons 106, 204
    induced intracranial self-stimulation 168, 169
    induced tics 241
    regeneration of 5-HT axons after injury by 112
Amygdala, 5-HT and anxiety 229
Analgesia, stimulation of periaqueductal gray 384
Analgesics, 5-HT receptor subtypes 335
Anorexia
    fenfluramine-induced 181
    fluoxetine-induced 181
Anorexia nervosa, 5-HT uptake inhibitors 262

Antidepressants
endocrine responses 290
effect on 5-HT receptors in brain 23
5-HT uptake inhibitors 259, 278
OCD treatment 278, 326, 327
panic disorder treatment 330
Anxiety
5-HT_{1A} receptor 312
effect of 5-HT_{1A} receptor agonists 209
effect on 5-HT release 125
OCD 271, 327
periaqueductal gray
effect of GABA-mediated drugs 220
effect of 5-HT related drugs 224
Anxiolytic compounds, effect on 5-HT neurons 120, 125, 128, 129
AP-7, antiaversive effect 223
Appetite suppressants 180, 195
Attention-deficit hyperactivity disorder 261
Autoreceptors
agonist actions 206
feeding behaviour 185
function *in vivo* 298
mediated changes in 5-HT release during behaviour 119
Aversion
cardiovascular components 349
5-HT 165, 172
periaqueductal gray 219, 389
effect of GABA-mediated drugs 220
effect of 5-HT related drugs 224
Azapirones
antidepressant action 291, 312
endocrine responses to 289
effect on 5-HT_{1A} autoreceptor function 307
effect on 5-HT release in hippocampus 304
effect on noradrenergic transmission 314

Beaded 5-HT axons 101, 102, 204
association with GABAergic interneurons 104
Behaviour, autoreceptor mediated changes in 5-HT release 119
Benzodiazepine receptors, anxiety 221
Bicuculline, induced epileptiform activity, effect of 5-HT 138

Blood pressure
effect of 5-HT 351
effect of 5-HT_{1A} receptor agonists 210
5-HT receptor subtypes and control of 361
BMY 7873 31, 40, 185, 306, 309
BMY 8227 367
Bradykinin, induced pain, effect of 5-HT 337
Brain dialysis 169
Brain stem
5-HT neurons in 98
5-HT and pain 340
5-HT receptor subtypes and cardiovascular control 361
Brain-stimulation reward 166
Bulimia, 5-HT uptake inhibitors 262
Buspirone 31, 37, 38, 40
adjuvant, OCD treatment 280
antidepressant action 312
endocrine responses to 312
effect on 5-HT release 303, 304, 310
hyperphagic effects 184
effect on noradrenergic transmission 314
Calcium, effect of 5-HT receptor antagonists on mobilization 38, 39
Calcium channels, 5-HT receptors 75
Capsaicin 17
effect on 5-HT_{1A} and 5-HT_3 receptors in spinal cord 21
5-Carboxyamidotryptamine 38, 39, 51, 56, 64
effect on 5-HT release 54, 119, 123, 128
Cardiovascular function
brainstem 5-HT receptors 361
5-HT and periaqueductal gray 350
5-HT_{1A} receptor agonist effects 210
Cataplexy 264
Caudal ventrolateral medulla, 5-HT and cardiovascular function 364, 366, 377
CGS 12066 31, 52
Chlordiazepoxide, effect on aversion 220, 221
p-Chloroamphetamine
differential vulnerability of 5-HT axons 106
regeneration of 5-HT axons after injury 112
N-(2-Chloroethyl)-*N*-ethyl-2-bromobenzylamine 16
effect on distribution of 5-HT_{1A} and 5-HT_3 receptors in brain 19
m-Chlorophenylbiguanide 32

m-Chlorophenylpiperazine 31
endocrine responses to 289
depressed patients 293
effect on feeding behaviour 189, 191
effect on OCD 273, 276
Cholinergic function in dementia 149
Cholinergic system, effect of 5-HT 150
Cinanserin 341
Citalopram
antidepressant activity 259
tic suppression 242
Clomipramine, OCD treatment 260, 272, 277, 278, 326
Clonidine, tick suppression 242
Cognitive disorders
5-HT and 5-HT receptor density in brain 148
5-HT_3 receptor antagonists 160
Cognitive performance
cholinergic function 149
effect of 5-HT 147
Conditioned place preference
8-OH-DPAT-induced 188
role of 5-HT 172
Cortisol, effect of 5-hydroxytryptophan 288
CP 93129 31, 64, 189
Cyanopindolol 2, 3, 30, 53, 181

DAU 6285 33
Defensive behaviour 219
Dementia, 5-HT and cholinergic function 148, 149
Depression
co-morbidity with panic disorder 330, 331
5-HT_{1A} receptor 312
5-HT uptake inhibitors 259, 329
neuroendocrine measures of 5-HT receptor subtype function 287, 290
Diabetic neuropathy 263
Diazepam, effect on 5-HT release 125, 129
5, 7-Dihydroxytryptamine 16, 81, 90
effect on distribution of 5-HT_{1A} and 5-HT_3 receptors in brain 19
1-(2, 5-Dimethoxy-4-iodophenyl)-2-aminopropane
cardiovascular effects 361, 370
effect on feeding behaviour 193

Dopamine
5-HT interaction, reward 167, 168, 171, 174
inhibitory action on medial prefrontal cortex cells 81, 89
role in 8-OH-DPAT-induced feeding mechanisms 187
Dorsal motor nucleus of the vagus, 5-HT and cardiovascular function 371
Dorsal raphe, 5-HT pathways, function 203
Drug abuse, effect of 5-HT uptake inhibitors 264
Drug self-administration, role of 5-HT 174

Eating disorders, 5-HT uptake inhibitors 261
Entorhinal cortex, modulatory function of 5-HT 135, 138
Epileptogenesis, effect of 5-HT 138
Excitatory amino acids, modulatory function of 5-HT 135, 144
entorhinal cortex 138
neocortex 142

F2692, effect on 5-HT release 126, 128, 130
Feeding behaviour
5-HT receptor subtypes 179
effect of 5-HT_{1A} receptor agonists 209
5-HT uptake inhibitors 261
Femoxetine 259
Fenfluramine
differential vulnerability of 5-HT axons 106
feeding behaviour and 5-HT receptors 180
prolactin response to 288
depressed patients 291
regeneration of 5-HT axons after injury 112
FG 7142 222
Fine 5-HT axons 101, 102, 110
damage by amphetamine neurotoxins 107, 112, 204
Flat body posture, effect of 5-HT_{1A} receptor agonists 208
Flesinoxan 31, 37, 39
Flumazenil 221
Fluoxetine
cataplexy 264
effect on eating disorders 262
induced hypophagia, 5-HT receptors 181
effect on obesity 262
obstructive sleep apnea 264
effect on OCD 278
pain 263

postanoxic intention myoclonus 263
premenstrual syndrome 263
psychiatric disorders 259
Fluvoxamine
effect on OCD 278, 326
treatment of psychiatric disorders 259
Forebrain, serotonergic systems in 108, 111

GABAergic interneurons, association with beaded 5-HT axons 104, 106
GABA-mediated neurotransmission, PAG and aversive behaviour 220
Gepirone 31, 40
antidepressant action 313
effect on 5-HT release in hippocampus 304, 310
hyperphagic effect 184
effect on noradrenergic transmission 314
Glutamate, modulatory function of 5-HT 135, 136, 144
entorhinal cortex 138
neocortex 142
G protein, coupled 5-HT receptors 2, 75, 76
Granisetron 33, 36, 81, 86, 89, 91, 147
Growth hormone, 5-HT receptors and release of 288
Guinea pig, autoreceptor mediated changes in 5-HT release during behaviour 119

Haloperidol, tic suppression 242
Head-shake 237
model of Tourette's syndrome 244
substances inducing 239
suppressing agents 242
HeLa cells, 5-HT_1 receptors, agonist/antagonist interaction 39
Hippocampus
5-HT_{1A} and 5-H_3 receptors in 20
serotonergic innervation 105
5-HT
ascending systems, functional differences 203
autoregulation of release from nerve terminals 49
binding sites in brain, autoradiography 65
effect on cholinergic system 150
effect on cognitive performance 147
effect on dopamine action in medial prefrontal cortex 89
dopamine interaction, feeding behaviour 187
dopamine interaction, reward 168, 171, 174
innervation in cerebral cortex 98

innervation in hippocampus 105
in vivo measurement of release 229
modulatory function in CNS 135, 138, 142
OCD 271, 325
pain and cardiovascular function 349
panic disorder 331
periaqueductal gray and anxiety 224
reward processes 165
stimulation-produced analgesia 383
suppressant action on medial prefrontal cortex cells 84
tic-like movements 240
Tourette's syndrome 235, 254
5-HT autoreceptors 50, 51
5-HT_{1A} autoreceptors
agonist actions 206
feeding behaviour 185
function *in vivo* 298
5-HT_{1B} autoreceptor 52
localization 69
5-HT_{1D} autoreceptor 53
localization 69
mediated changes in 5-HT release during behaviour 119
5-HT axons 98, 101
association of beaded axons with GABAergic interneurons 104
organization of raphe projections to forebrain 108
regeneration after injury by amphetamine neurotoxins 112
vulnerability to amphetamine neurotoxins 106, 204
5-HT biophase 51
5-HT neurons
effect of 5-HT_{1A} receptor agonists 210
effect of neurotoxic amphetamines 205
pain regulation 335
brain stem 340
periphery 336
spinal cord 338
projections in brain, clinical implications 259
5-HT receptors
agonists and antagonists 30
agonists/antagonist interactions 38
cardiovascular control 361
feeding behaviour 179
G protein-coupled 2, 75

ligand-gated ion channels 7, 73
localization in CNS 13, 61
molecular biology 1
mutagenesis 7
neuroendocrine measures of subtype function in depression 287, 290
pain 337
radioligand binding and subclassification 30
species differences 33
5-HT_{1A} receptors
agonist actions 206, 306, 312
agonist/antagonist interactions 39
antagonists 302
autoreceptor function *in vivo* 298
autoreceptor stimulation, functional effects 207
aversion 349
brain-stimulation reward 168
cardiovascular function 210, 349, 366, 368, 373, 374
depression 290, 297, 312
desensitization 310, 312
feeding behaviour 181, 184, 209
G-protein coupling 75
ion conductances 75
ligands 31
ligands and noradrenergic transmission 314
localization in CNS 13, 17, 66
molecular biology 2
neuroendocrine measures of function 288, 289
pain 339
pre-versus post-synaptic 307, 313
sexual behaviour 209
somatodendritic autoreceptor 119, 130
5-HT_{1A} receptor mRNA, distribution in brain 66
5-HT_{1B} receptors
aversion 224
feeding behavour 181, 188
ligands 31
molecular biology 3
species differences 33
terminal 5-HT autoreceptors 52
5-HT_{1B} receptor mRNA, distribution in brain 69
5-HT_{1C} receptors
cardiovascular function 370, 376

distribution in brain 66
feeding behaviour 181, 191
G-protein coupling 76
ion conductances 76
ligands 31
molecular biology 5
neuroendocrine responses 290
OCD 277
5-HT_{1C} receptor mRNA, distribution in brain 66, 68
5-HT_{1D} receptors
feeding behaviour 193
ligands 31
molecular biology 4
selective radioligand GTI 63
species differences 33
terminal 5-HT autoreceptors 53, 119
5-HT_{1D} receptor mRNA, distribution in brain 69
5-HT_2 receptors
anxiety 224, 227
cardiovascular function 370, 376
cognitive disorders 148
distribution in brain 67
endocrine responses 288
feeding behaviour 181, 193
G protein coupling 76
ion conductances 76
ligands 31
molecular biology 5
pain 339, 341
species differences 34
tic-like movements 240, 243, 245, 246
5-HT_2 receptor mRNA, distribution in brain 67, 68
5-HT_3 receptors
antagonists and cognitive disorders 160
cardiovascular function 370
effect on cholinergic function 151
cognition 147, 151
conditioned place preference 174
dopamine-5-HT interactions 171
feeding behaviour 194
ligand-gated channels 73
ligands 32, 36

localization in CNS 13, 18
molecular biology 7
pain 337
species differences 34
subtypes 35
5-HT_4 receptors 9
ion conductances 76
ligands 32
5-HT_{dro} receptors 6
5-HT transporter 7, 205
5-HT uptake inhibitors 255
effect on depression 327, 328
effect on food intake 181, 182
5-HT concentration in synaptic cleft 258
effect on non-psychiatric disorders 263
effect on obesity and eating disorders 261
effect on OCD 276, 278, 326
effect on psychiatric disorders 259
tic suppression 242
Huntingtons chorea, 5-HT in brain 148
8-Hydroxy-2-(di-*n*-propylamino)tetralin 2, 30, 31, 37, 38 39, 63
behavioural actions 209
binding sites in brain 13, 18
cardiovascular effects 361, 366, 371, 374
dopamine-5-HT interaction 168
effect on feeding behaviour 184, 185
effect on 5-HT release *in vivo* 300, 310, 311
inhibition of 5-HT neuronal firing 119, 124, 210
effect on motor activity 206
effect on RVLM neurones 353
6-Hydroxydopamine 16
effect on distribution of 5-HT_{1A} and 5-HT_3 receptors in brain 19
5-Hydroxyindoleacetic acid, in brain in cognitive disorders 148
5-Hydroxytryptophan
cortisol responses to 288, 291
head-shake 238, 241
Hyperalgesia 352
Hypothermia, 5-HT_{1A} receptor 312

Ibotenic acid, effect on 8-OH-DPAT binding in brain 13, 20
ICS 205930 32, 37, 84, 91, 147, 151, 155, 171
effect on pain 337, 338

Iminodipropionitrile 245
Imipramine, panic disorder 330
Indalpine 259
Inflammatory pain, role of 5-HT 338
Intracranial self-stimulation, role of 5-HT 166
Ion conductances, control by 5-HT receptors 73
Ipsapirone 31, 37, 39, 40
    antidepressant action 313
    endocrine responses 289, 291
    effect on 5-HT_{1A} and 5-HT_3 receptors in brain 13, 17, 23
    effect on 5-HT release and behaviour 127, 130
    effect on 5-HT release in hippocampus 304, 310
    hyperphagic effects 184
    effect on noradrenergic transmission 314
Isamoltane 31
    antiaversive effect 225

Jaw opening reflex 385, 391

Kainic acid, effect on 8-OH-DPAT binding in brain 13, 20
Ketanserin 30, 92, 181, 224, 225, 376

Learning, role of 5-HT 150
Lithium
    adjuvant, effect on OCD 279
    tic suppression 243
Locomotor activity, effect of 5-HT_{1A} receptor agonists 206
LSD 41
    induced tics 241
LY 165163 184
LY 278854 33

Macronutrient selection, role of 5-HT 189, 190
Maprotiline 331
MDL 11,939 81, 86, 92
MDL 72222 32, 36, 174
MDL 72832 31, 184
MDL 73005 31, 37, 39, 40
MDL 73005EF, effect on 5-HT release in hippocampus 306, 308, 309
Medial prefrontal cortex, role of 5-HT_3 receptors 81
Median raphe, 5-HT pathways, functions 203

Memory
age-associated impairment, effect of ondansetron 160
role of 5-HT 150
Mesulergine 30
Metergoline 54m 84, 86, 181, 183, 192, 274, 277, 279
Methamphetamine, vulnerability of 5-HT axons 106
Methiothepin 38, 39, 302
N-Methyl-D-aspartic acid, modulatory function of 5-HT 135, 136, 144
entorhinal cortex 138
neocortex 142
3,4-Methylenedioxyamphetamine
differential vulnerability of 5-HT axons 106
regeneration of 5-HT axons after injury 112
3,4-Methylenedioxymethamphetamine
differential vulnerability of 5-HT axons 106
regeneration of 5-HT axons after injury 112
2-Methyl-5-HT 32, 37
effect on acetylcholine release 152
cardiovascular effects 370
effect on dopamine in nucleus accumbens 171
effect on 5-HT release 56
effect on medial prefrontal cortex cells 81, 84, 89
effect on RVLM cells 354, 356
5-Methyl-urapidil 31
cardiovascular effects 366, 368, 370
Methysergide 340
Metitepine 54, 54, 56
Metoclopromide 36
Microdialysis, 5-HT release *in vivo* 299
Midazolam, antiaversive effect 221
Migraine 338
MK-212
endocrine response 290
depressed patients 293
induced hypophagia 191
Morphine
analgesia and 5-HT 341
induced conditioned place preference 173
Motor activity, effect of 5-HT_{1A} receptor agonists 206
Multimodal multireceptive units 398

NAN 190 31, 38, 39, 49
effect on food intake 185
effect on 5-HT release and transmission 306, 309
Neocortex, modulatory function of 5-HT 135, 142
Nerve terminals, autoregulation of 5-HT release 49
Neurodegenerative disorders, 5-HT and 5-HT receptors in brain 148
Neuroleptics
induced catalepsy, effect of 8-OH-DPAT 208
tic suppression 242
Neuromodulation 136
Neurones, 5-HT receptors 15
Nifedipine, tic suppression 244
Nociception and 5-HT 14, 335
descending spinal control system 394, 397
periaqueductal gray 350
stimulation-produced analgesia 383
Noradrenergic transmission, effect of 5-HT_{1A} ligands 314
Norfluoxetine 183
Nucleus ambiguus, 5-HT and cardiovascular function 371, 375
Nucleus basalis magnocellularis lesion, 5-HT and cognitive performance 147, 154, 156
Nucleus raphe magnus, stimulation-produced analgesia 391, 394
Nucleus reticularis paragigantocellularis 393

Obesity, 5-HT uptake inhibitors 195, 262
Obsessive-compulsive disorder 271
5-HT agonists and antagonists 273
5-HT and diagnosis 325
5-HT uptake inhibitors 260, 278
neurological disorder 328
Tourette's syndrome 235, 242, 246
Obstructive sleep apnea 264
Off-cells, nociceptive transmission 398
Ondansetron 33, 36, 147
effect on amphetamine-induced increase in intracranial self-stimulation 168, 169
effect on cognition 151, 157, 159
effect on cognitive impairment in man 160
Opiates, tic suppression 244

Pain
5-HT neurons 335
brain stem 340
periphery 336
spinal cord 338
5-HT and periaqueductal gray 350
5-HT uptake inhibitors 263
stimulation-produced analgesia 383, 384
Panic disorder
antidepressants 330
co-morbidity 330
diagnosis 329
role of periaqueductal gray and 5-HT 228
serotonergic specificity 331
treatment with 5-HT uptake inhibitors 260
Parachlorophenylalanine 81, 90
Paroxetine 259, 263
Penbutolol, effect on 5-HT release 302
Pentobarbital, effect on aversion threshold 220
Periaqueductal gray
anxiety 219
effect of GABA-mediated drugs 220
effect of 5-HT related drugs 224
aversive system and 5-HT 349
pain 341
pain and cardiovascular function 350
panic attacks 228
stimulation-produced analgesia 383
Phenylbiguanide 32, 37, 56
Pindolol 38, 39, 84
effect on 5-HT release 302
Postanoxic intention myoclonus 263
Potassium channels, 5-HT receptors 75, 76
Premenstrual syndrome, effect of 5-HT uptake inhibitors 263
Prolactin, 5-HT receptors and release of 288
Propranolol, anxiolytic effect 224, 226
Psychiatric disorders, effect of 5-HT uptake inhibitors 259
Punishment 167

Quipazine, effect on feeding behaviour 193

Raphe nuclei
dorsal and median 5-HT pathways, functional differences 203
5-HT autoreceptor and 5-HT release 120
5-HT$_{1A}$ autoreceptor 298
5-HT neurons 98, 101
5-HT$_{1A}$ receptors and feeding behaviour 186
5-HT and stimulation-produced analgesia 384, 391, 397
organization of projections to forebrain 108, 111
Renzapride 33
Reward
central 5-HT 165
brain-stimulated 166
conditioned place preference paradigm 172
drug self-administration 174
8-OH-DPAT and feeding behaviour 188
Rhizotomy, effect on 5-HT$_{1A}$ and 5-HT$_3$ receptors in spinal cord 21
Ritanserin 81, 84, 86, 92, 181, 224, 225, 288
anxiolytic activity 229
drug self-administration 175
feeding behaviour 192
Rostral ventrolateral medulla, pain and cardiovascular function 350
modulating effect of 5-HT 352
origin of serotonergic influences 356
RU 24969 31, 38, 52
feeding behaviour 188, 190
RX 336-M 238

Scopolamine, cognitive performance 147, 149, 153, 155, 156
SDZ 21-009 53
SDZ 205-557 33
SDZ 216-525 31, 38, 39, 302
Serotonergic neurons, brainstem organization 98
Serotonin, see 5-HT
Serotonin-5-*O*-carboxymethyl-glycyl-(^{125}I)tyrosinamide 30, 63
Sertraline
depression 259
induced anorexia 184
OCD 278
Sexual behaviour, effect of 5-HT$_{1A}$ receptor agonists 209
Smoking, effect of 5-HT uptake inhibitors 264
Somatodendritic 5-HT$_{1A}$ autoreceptor 298
Species differences, 5-HT receptor subtypes 33

Spinal cord
5-HT and pain 338
5-HT and stimulation-produced analgesia 396
5-HT_{1A} and 5-HT_3 receptors in 20
Spiperone 84, 92
Spiroxatrine 39, 40
Stimulation-produced analgesia 383
5-HT descending control system 394
ventromedial medulla and nucleus raphe magnus as main targets 391
Stress-produced analgesia 389
Subretrofacial nucleus, 5-HT and blood pressure 361, 363, 366, 374
Sulpiride, tic suppression 242
Sumatriptan 31, 56, 64
Sympathetic nerve activity 365
effect of 8-OH-DPAT 369

TFMPP 31
effect on feeding behaviour 189, 191
Thermoregulation, effect of 5-HT_{1A} receptor agonists 210
Tic disorders 235
animal models 237, 244, 246
association with OCD 329
induction and exacerbation 240
suppressing agents 242
Tourette's syndrome 235
animal models 244, 246
association with OCD 329
induction and exacerbation of tic-like movements 240
tic-suppressing agents 242
Trichotillomania 260
L-Tryptophan, induced endocrine responses 287

(S)-UH-301 302, 303

Visual cortex, serotonergic axons in 100
Voltammetry 169

WAY 100135 185, 302, 303
Wet-dog-shake 237
model of Tourette's syndrome 244
substances inducing 239
suppressing agents 242

Yohimbine 64

Zacopride 13, 15, 18, 33, 36, 84, 86, 91, 147, 151
Zimelidine
antiaversive effect 224
treatment of pain 263
treatment of psychiatric disorders 259